Productive Farming
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ZAMBIA'S COTTON BREEDING PROGRAMME

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Cotton did not become an important crop in Zambia until the mid 1960's. At first breeding work involved only variety trials conducted for the Gatooma Research Station in Rhodesia. In 1966 a Cotton Research Section was formed with assistance of the Cotton Research Corporation of London. In 1975 the CRC staff left due to the dissolution of the Corporation. Cotton breeding work started again in 1978 under Dr. Chami of FAO. From 1981 Cotton breeding work has been undertaken with assistance from the Cotton and Exotic Textiles Research Insitute of France (IRCT). The work is a continuation of the work started by Dr. Chami which was based on the selection within existing populations and the introduction of "exotic hirsutum varieties to test their performance".

The programme defined by Dr. Chami and modified by Mr. Pauly was adapted to a situation where much of the early 1970's germplasm had been lost or inadequately conserved. Due to the heterogeneity of the commercial varieties the needs of the mill were not being satisfied. Following a season of observations, during which the germplasm was screened and new introductions tested, the breeding work is now established on short, medium and long term lines.

In the short term, a mass pedigree selection was initisted in 1981/82 on both commercial varieties. As we started with a good variability, probably due to the mixtures, there was still scope for improving each variety. In actual fact, the first results, although incomplete, are very encouraging as far as yield, ginning percentage and lint staple length are concerned. The purpose of this operation is not initially to obtain a true to type variety but one with more uniform agronomic characteristics (Yield, ginning percentage, resistance to blackarm and jassids) and lint quality (length, fineness, strength).

The selection scheme which is adopted allows a constant flow of improvement from the breeders to the growers. At year 1981/82 the choice of single plants provided enough seeds to grow a small nucleus of improved CHILALA and CHUREZA, called CLA 82 and CZA 82. In the first years a more accurate selection based upon replicated progeny-rows was made to constitute CLA 83 and CZA 83. The remaining seeds were used to grow the breeder's seeds at Magoye (year 2) which will be released as basic (year 3) and certified seed (year 4). Therefore, CLA 82 and CZA 82 will be grown at the commercial stage at year 5 (1986/87), CLA 83 and CZA 83 at year 6 (1987/88), etc.....

In the mid term, the earlier breeding programmes will be carried on but none of the crosses seems to have all the hoped for characteristics. On the other hand, some of the varieties introduced in 1978 or 1979 are still being tested under a range of conditions.

After having satisfactorily passed through the trials held at research stations, two of them have been compared in on farm trials in Central and Southern Provinces. These varieties (SR1 F4/71 from Tchad and L142-9 from Ivory Coast) gave very promising results last year and, according to their performance so far this season, may be proposed in 1984 to The Variety Release Committee to replace one of the commercial varieties.

In the longer term, a number of crosses which were made in 1982/83 between the local varieties and 6 exotic varieties of various origins are being tested for their complementary characteristics and their genetical performance. All are crossed with each other to determine the best parants and the best potential crosses, within a short time and with a reduced chance of error. This programme, if successful, will see its conclusion in 1991 or 1992.

A Magoye Regional Research Station Feature

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